ABSTRACT OF THE DISCLOSURE

Virtual displays with micro-display engines are arranged in compact, lightweight configurations that generate clear virtual images for an observer. The displays are particularly suitable for portable devices, such as head-mounted displays adapted to non-immersive or immersive applications. The non-immersive applications feature reflective optics moved out of the direct line of sight of the observer and provide for differentially modifying the amount or form of ambient light admitted from the forward environment with respect to image light magnified within the display. Micro-display engines suitable for both non-immersive and immersive display applications and having LCD image sources displace polarization components of the LCD image sources along the optical paths of the engines for simplifying engine design. A compound imaging system for micro-display engines features the use of reflectors in sequence to expand upon the imaging possibilities of the new micro-display engines. Polarization management also provides for differentially regulating the transmission of ambient light with respect to image light and for participating in the image formation function of the image source.